I-405 Express Toll Lanes Rate Setting

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Washington State Transportation Commission
January 21, 2014

Presentation Purpose and Agenda

Purpose

- Briefing on I-405 express toll lanes policy recommendations

Agenda

- I-405 express toll lanes project history and background
- I-405 rate setting policies
  - Rate setting timeline
  - Minimum and maximum toll rates
  - Pay By Mail toll increment
  - Toll exemptions
  - Carpool and peak period definitions

I-405 Rate Setting Timeline

Nov 20, 2013: I-405 rate setting began with the Commission

Dec-Feb 2014: Continued work with the Commission to explore policies, including the minimum and maximum rates, exemptions

Mar-Nov 2014: Continued work with the Tolling Subcommittee to explore policy options and develop recommendations

Oct 14, 2014: Report from the Tolling Subcommittee to the full Commission on progress regarding policy recommendations

Jan 21, 2015: Briefing on Tolling Subcommittee policy recommendations

Feb 2015: Commission proposes final recommendations for I-405 rate setting policies

Formal proposal filed (CR-102)

Spring 2015: Formal adoption filed (CR-103)

I-405 Express Toll Lane
Project History and Background

The I-405 Corridor has one of the worst commutes

- **Bad traffic**
  - Drivers on I-405 experience some of the worst traffic in the state, up to eight hours of congestion each day
  - By 2030, employment will grow by 50% and the area will see 25% more residents

- **Crowded HOV lanes**
  - I-405 HOV lanes are not meeting state and federal requirements to operate at 45 miles per hour 90 percent of the time
  - I-405 HOV lanes are often just as congested as the regular lanes

- **Transit suffers**
  - Congested lanes severely delay transit trips and reduce reliability, requiring more buses and increasing the costs

I-405 Executive Advisory Group History

Executive Committee (1999 – 2002)

Outreach and coordination (2003 – 2006)

Executive Advisory Group (2009 – 2011)

Executive Advisory Group (2012 – 2013)

1999
- I-405 EIS Notice of Intent

2001
- I-405 Managed Lanes Analysis

2002
- EIS
- ROD
- Master Plan

2003
- Managed Lanes Technical Analysis

2006
- Express Toll Lane Investment Analysis

2009
- ESSB 5352 Eastside Corridor Tolling Study

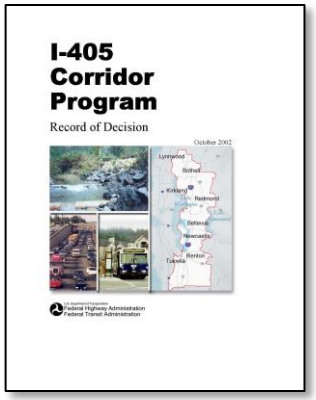
2010
- Expert Review Panel Study

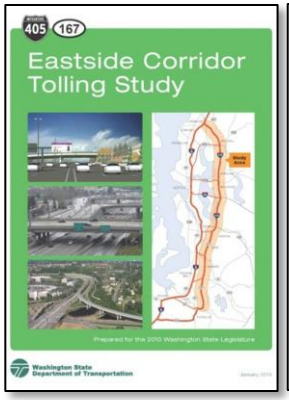
2011
- EHB 1382 Authorizes Tolling on I-405 and WSTC Study

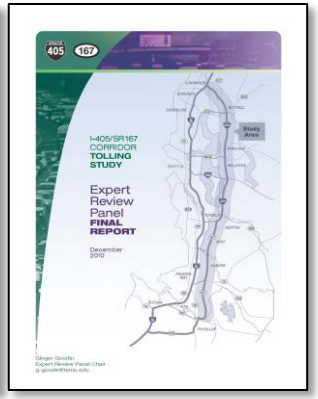
2012
- WSTC Study Complete Sept. 24

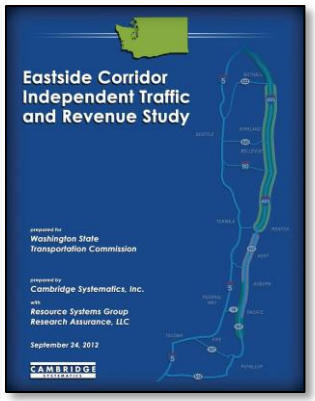
2013
- WSDOT Funding and Phasing Plan

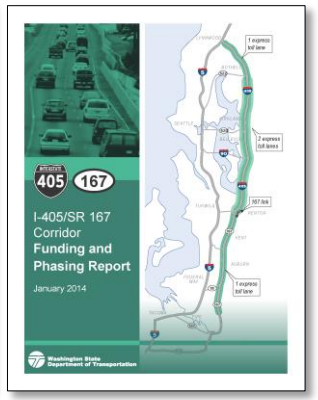
2014











I-405 Master Plan

Regional Consensus

- EIS Record of Decision, 2002

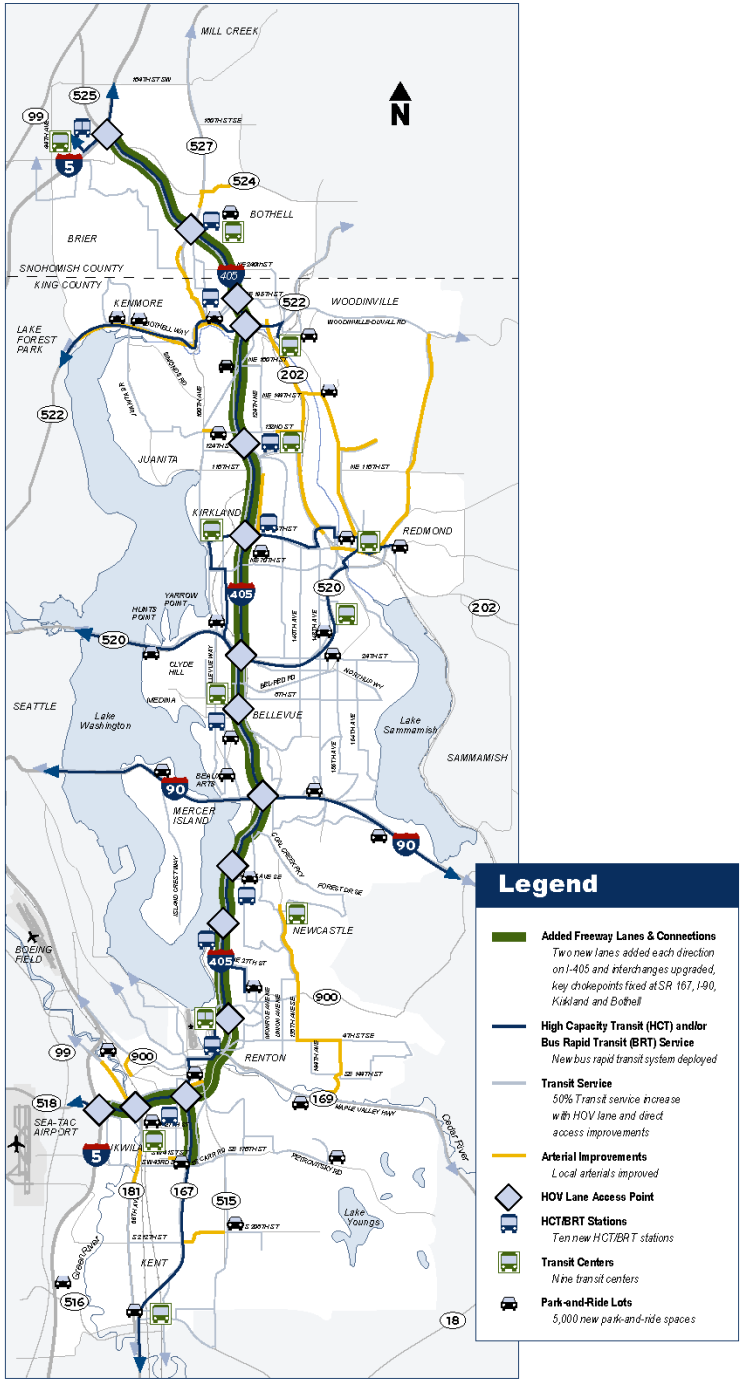
Roadways

- 2 new lanes in each direction
- Local arterial improvements

Transit & Transportation Choices

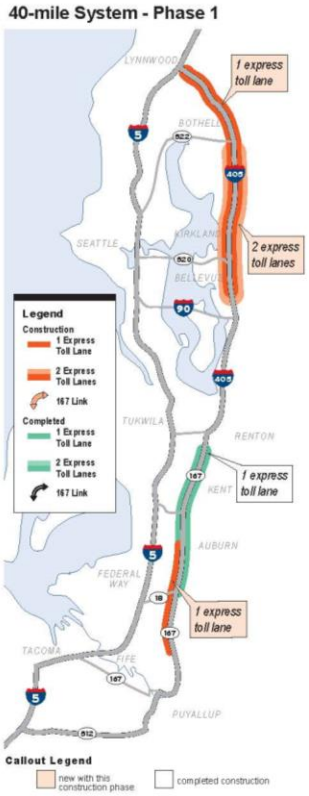
- Bus Rapid Transit system
- 9 new transit centers added
- 50% transit service increase
- HOV direct access ramps and flyer stops
- Potential managed lanes system
- 5000 new Park & Ride spaces
- 1700 new vanpools

Environmental Enhancements



I-405 Master Plan - 10 Year Implementation Strategy

Adopted Plan

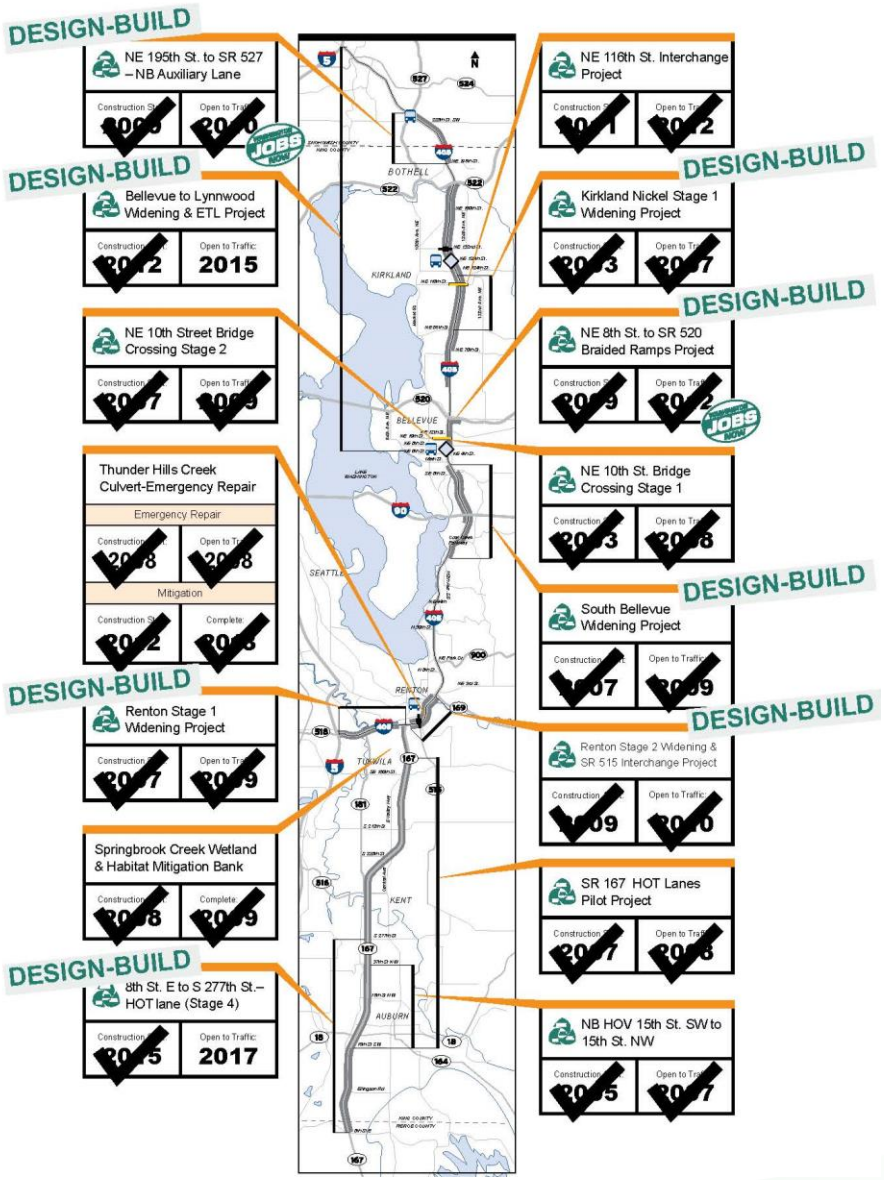


I-405/SR 167 Interchange Direct Connector

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Current Schedule	Bellevue to Lynnwood Construction (funded)			Opens 2015	Toll Collection		Renton to Bellevue & SR 167 Direct Connector (unfunded)			Opens 2021	

We've delivered 13 projects throughout the corridor on time, under budget

- Initial program investments addressed high-priority chokepoints in Bellevue, Bothell, Kirkland and Renton.
- Bellevue to Lynnwood project (expected completion in 2015) is the second step towards a 40-mile corridor managed lanes system.
- $1.2 billion delivered on schedule, under budget



Washington State Department of Transportation

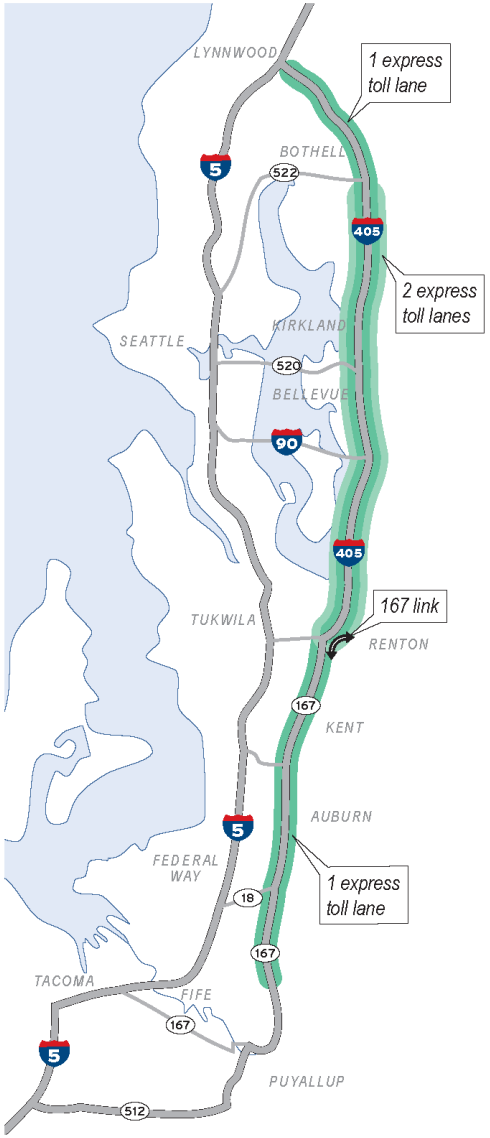
Express Toll Lanes from Bellevue to Lynnwood is the next step of the 40-mile system

Improve traffic performance

- Provides sustainable reliability
- Moves more people and vehicles throughout the entire freeway
- Improves transit speed and reliability
- Provides a bypass to congestion for the trips users feel are important

Fund future improvements

- Variable toll rates increase revenue as the region grows
- Provides funding for improvements
- Supplements gas tax revenue
- Market-based direct user fee



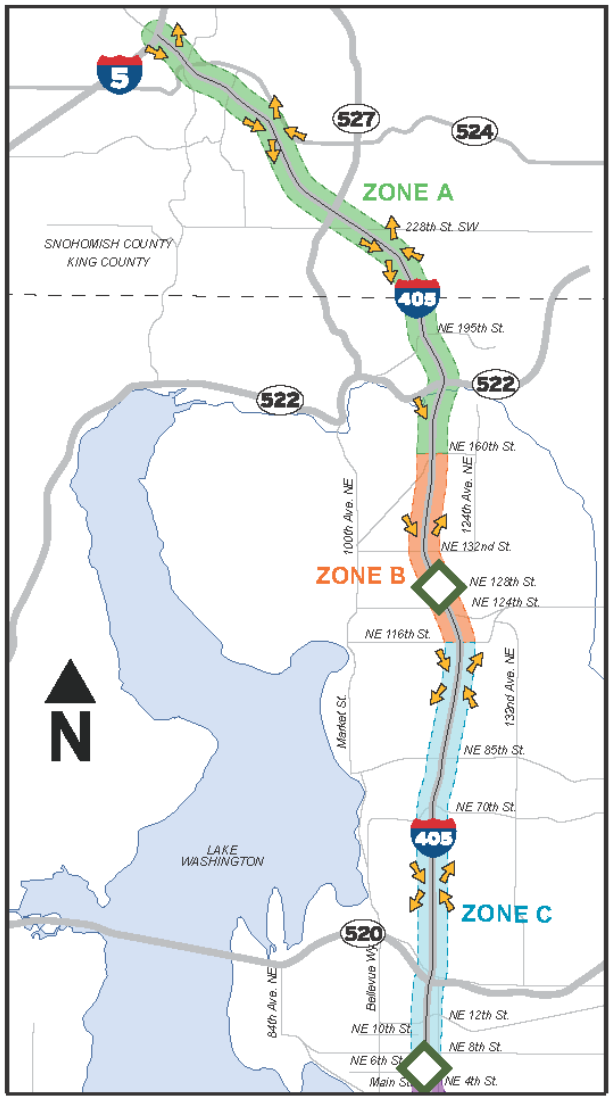
Bellevue to Lynnwood Express Toll Lanes Project

Project Description

- Adds capacity between NE 6th Street in Bellevue and SR 522 in Bothell
- Builds noise walls
- Constructs northbound braided ramps at NE 160th Street
- Two lane express toll lane system from NE 6th Street in Bellevue to SR 522
- One lane express toll lane system from SR 522 to I-5 in Lynnwood

Awarded to Flatiron Constructors, Inc. for $155 million

Project schedule	2012	2013	2014	2015
Bellevue to Lynnwood	★			★



Washington State Department of Transportation

Legislative Direction – I-405 Toll Authorization

(RCW 47.56.880, as amended by EHB 1382 in 2011)

(4) The department shall monitor the express toll lanes project and shall annually report to the transportation commission and the legislature on the impacts from the project on the following performance measures:

(a) Whether the express toll lanes maintain speeds of forty-five miles per hour at least ninety percent of the time during peak periods;

(b) Whether the average traffic speed changed in the general purpose lanes;

(c) Whether transit ridership changed;

(d) Whether the actual use of the express toll lanes is consistent with the projected use;

(e) Whether the express toll lanes generated sufficient revenue to pay for all Interstate 405 express toll lane-related operating costs;

(f) Whether travel times and volumes have increased or decreased on adjacent local streets and state highways; and

(g) Whether the actual gross revenues are consistent with projected gross revenues as identified in the fiscal note for Engrossed House Bill No. 1382 distributed by the office of financial management on March 15, 2011.

(5) If after two years of operation of the express toll lanes on Interstate 405 performance measures listed in subsection (4)(a) and (e) of this section are not being met, the express toll lanes project must be terminated as soon as practicable.

2013 Executive Advisory Group Consensus Recommendations

Carpool Policy

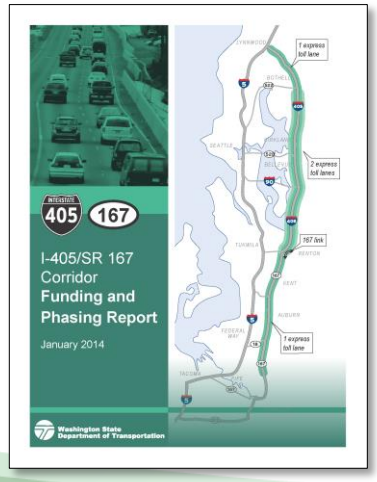
Bellevue to Lynnwood express toll lanes

3+ Carpool Free Peak/2+ Carpool Free Off-peak

Funding and Phasing

Next segment: Renton to Bellevue

EAG preferred High Traditional Funding scenario ($1,175 million from traditional sources such as gas tax). However, understanding competing statewide needs, the EAG endorsed the ***Medium Funding scenario*** ($960 million from traditional sources, $215 million from toll revenues).



Cities

- Bothell – Mayor Mark Lamb
- Kirkland – Mayor Joan McBride
- Bellevue – Councilmember Kevin Wallace
- Newcastle – Mayor Rich Crispo
- Renton – Councilmember Randy Corman
- Tukwila – Mayor Jim Haggerton
- Kent – Mayor Suzette Cooke
- Auburn – Mayor Pete Lewis
- Sumner – Mayor Dave Enslow
- Puyallup – Mayor Rick Hansen
- Algona – Mayor David Hill
- Pacific – Vacant

Agencies

- Community Transit – Carol Thompson
- Sound Transit – Board member Fred Butler
- King County Metro Transit – Harold Taniguchi
- Puget Sound Regional Council – Dave Gossett
- Washington State Transportation Commission – Charlie Royer
- Federal Highway Administration – Dan Mathis
- Federal Transit Authority – Rick Krochalis
- Washington State Department of Transportation

Counties

- Snohomish County – Councilmember Dave Gossett
- King County – Councilmember Reagan Dunn
- Pierce County – Councilmember Jim McCune

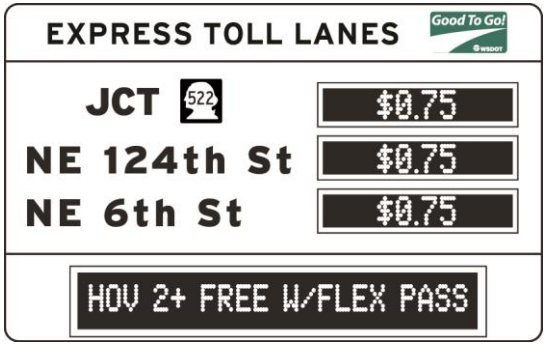
All Corridor State Legislators (Invited)

How Express Toll Lanes Will Work

- **Toll rates adjust based on demand**
  - Keeps lanes moving at 45mph+
  - Signs display toll rates based on your destination
  - Non-carpool drivers pay rate posted upon entry – even if rate changes during trip

- **Transit, vanpools, motorcycles and carpools are free**
  - Carpoolers must use new Flex Pass in HOV mode to ride free

- **Ways to pay**
  - Use a *Good To Go!* pass to pay the lowest toll rate
  - *Good To Go!* Pay By Plate
  - *Good To Go!* short term account
  - Pay By Mail at a higher toll rate



How Express Toll Lanes Will Work

- **Converting HOV lanes to express toll lanes**
  - The HOV lane between I-5 and SR 522 will be converted to a single express toll lane
  - The HOV lane between SR 522 and NE 6th Street will be converted and paired with a new lane to create two express toll lanes
- **Dedicated entry and exit points**
  - Northbound: five entries, six exits
  - Southbound: six entries, five exits

I-405 Rate Setting Policies

Policy Choices for I-405 Rate Setting

- **Minimum Toll Rate**
- **Maximum Toll Rate**
- **Pay By Mail Toll Increment**
- **Exemptions**
  - Transit
  - Vanpools
  - Carpools
  - Motorcycles
  - In-service emergency vehicles, maintenance, enforcement, and incident management vehicles
- **Carpool Policy**
  - Occupancy requirement
  - If applicable, peak period definition

Minimum Toll Rate

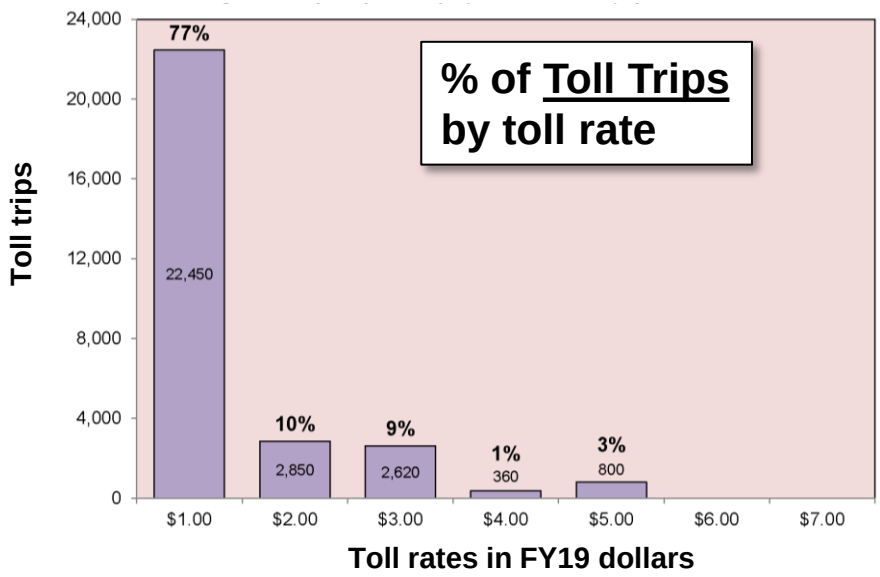
- **The Commission must set a minimum toll rate for I-405 express toll lanes**
  - SR 167 minimum is $0.50
  - Modeling assumed $0.80 as minimum toll in opening year
  - Modeling assumed in effect between 5AM and 8PM, although WSDOT will be implementing 24 hour operations
- **Minimum toll should cover toll collection cost**
- **Minimum toll should raise sufficient revenue**
  - A majority of toll transactions will be at the minimum rate
  - Significant contribution to revenue for the initial I-405 segment
- **A low minimum toll will improve express toll lane use and lessen concerns about equity**

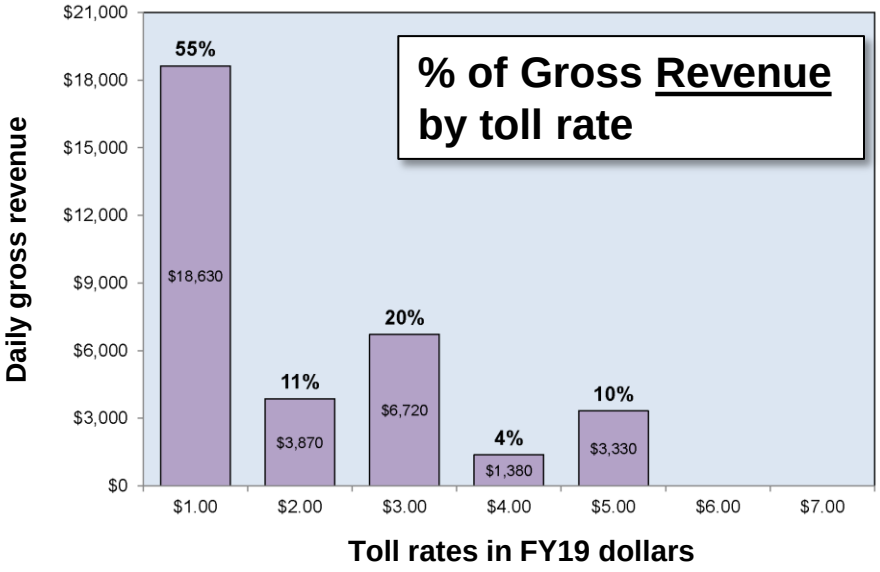
Modeled Distribution of Dynamic Toll Rates

I-405
Bellevue to Lynnwood

2018
Projected distribution of tolls on an average weekday

- 77% of toll trips are projected to be less than $1.00, accounting for 55% of gross revenue
- Selection of a minimum toll rate is critical to covering operating costs in early years



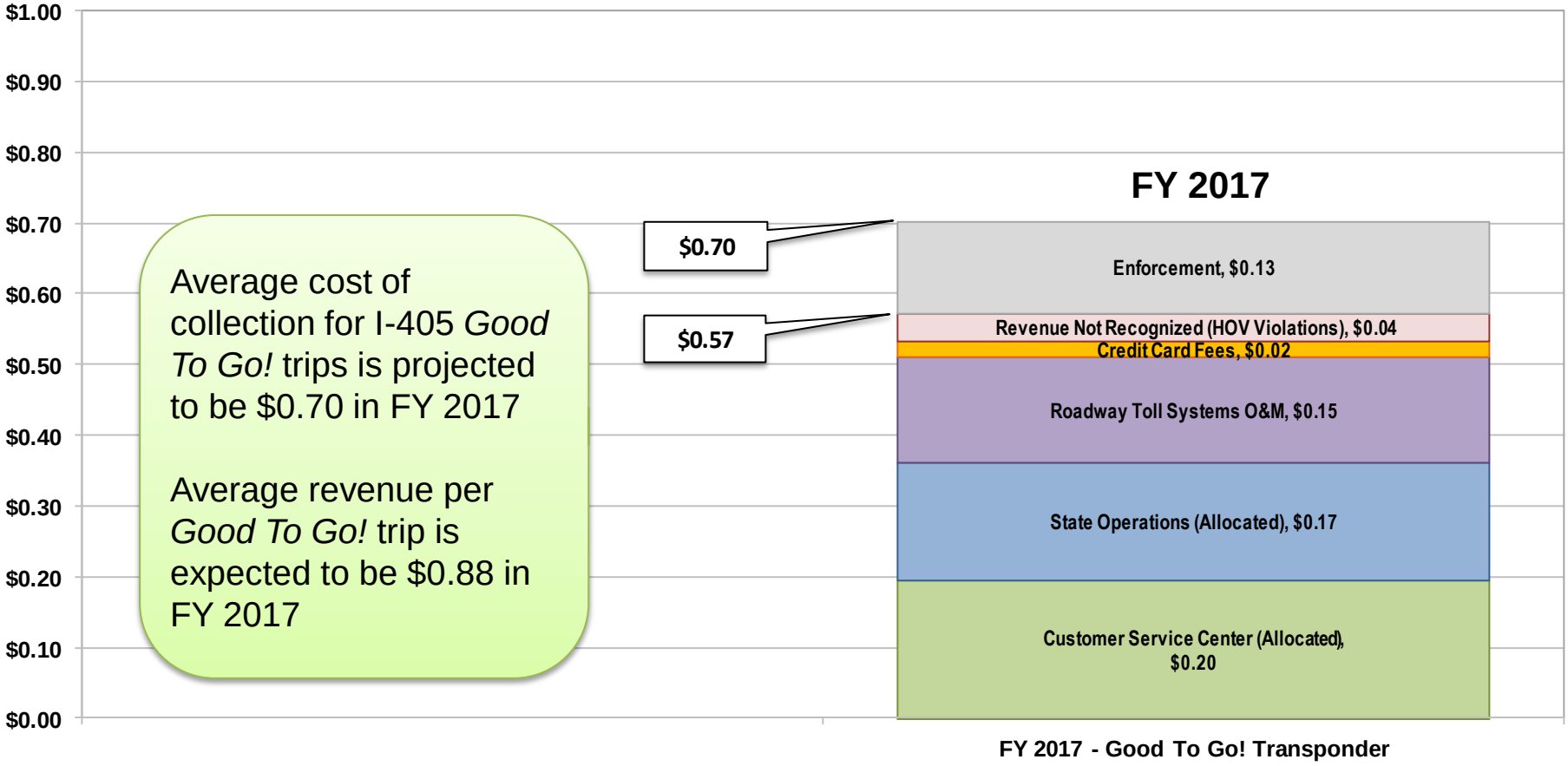


Source: CDM Smith Traffic and Revenue Report

Projected Toll Collection Costs for *Good To Go!*

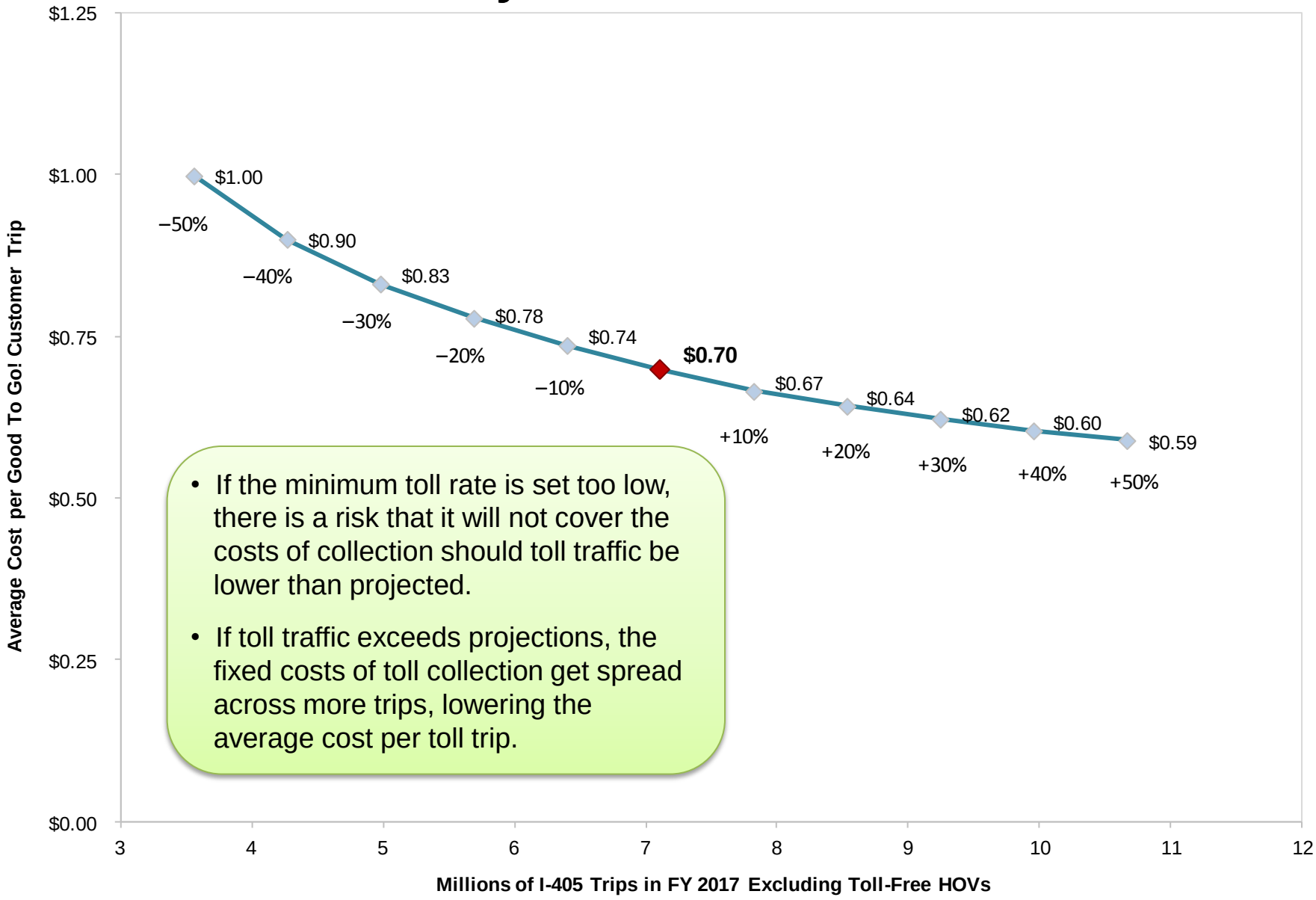
Average cost of collection for I-405 *Good To Go!* trips is projected to be $0.70 in FY 2017

Average revenue per *Good To Go!* trip is expected to be $0.88 in FY 2017



Average Cost of Toll Collection for *Good To Go!*

FY 2017 Cost Sensitivity Based on Volume



- If the minimum toll rate is set too low, there is a risk that it will not cover the costs of collection should toll traffic be lower than projected.
- If toll traffic exceeds projections, the fixed costs of toll collection get spread across more trips, lowering the average cost per toll trip.

Tolling Subcommittee Recommendation

$0.75 minimum *Good To Go!* toll rate

- 77 percent of trips are anticipated to be below $1.00
- A lower minimum toll reduces the barrier to entry
- Consistent with average collection costs of $0.70

Maximum Toll Rate

- **The Commission must set a maximum toll rate for I-405 express toll lanes**
- **If the algorithm proposes a rate higher than the maximum, the toll system would remain at the maximum toll rate**
  - Performance may be degraded when this occurs
  - Note: When SR 167 HOT lanes reach the maximum toll rate and traffic levels continue to increase, the lane is switched to HOV-only

Historical Toll Rate Analysis

Source/Year	Assumptions	Toll Rates	Max Toll Rate
I-405/SR 167 Eastside Corridor Tolling Study January **2010**	• Evaluated 5 different corridor phasing options and 3+ HOV toll free. • $1.00 minimum toll • Facility operates from 5 a.m. to 8 p.m. • 2008 dollars	• Average toll for Study Option 1 (Bellevue to Lynnwood) is **$3.90** in 2020 conditions (2008 dollars) • Average toll rate on a typical commute day in 2013 is **$2.30** (2008 dollars) • Average toll for Study Option 4 (40-mile system) is **$7.90** in 2020 conditions (2008 dollars)	• No maximum assumed • A sensitivity test was done with a max toll rate of $12.
I-405/SR 167 Expert Review Panel Study, December **2010**	• Reviewed January 2010 I-405/SR 167 Eastside Corridor Tolling Study	• Based on the different study options, average toll rate for a typical commute day with year 2020 conditions was between **$3.90** (Study Option 1) and **$7.90** (Study Option 4) (2008 dollars)	• No maximum assumed
SHB 2941 Fiscal Note Feb. 15, **2010**	• Used January 2010 I-405/SR 167 Eastside Corridor Tolling Study data	• Average toll rate for Study Option 1 was **$2.30** (2008 dollars)	• No maximum assumed
RCW 47.56.880 (EHB 1382) Fiscal Note April 22, **2011**	• Used January 2010 I-405/SR 167 Eastside Corridor Tolling Study data	• Average toll *revenue* per transaction of **$3.80** in FY 2015.	• No maximum assumed*****
Eastside Corridor Independent Traffic and Revenue Study **November 2012**	• 40-mile system • 2030 conditions • $0.75 minimum toll	• Average toll rate for HOV 3+ toll free AM and PM Peak period is **$2.01-$2.03** respectively.	• No maximum assumed
I-405/SR 167 Express Toll Lanes 2012 Planning Level Traffic and Revenue Study **December 2013**	• $.0.75 minimum toll • Opening year 2014 for Study Option 1 • 2014 dollars	• Study Option 1 Average toll rate for HOV 3+ toll free in 2014 is **$1.11** • Study Option 1 Typical day commute in 2014 is **$1.60**	• No maximum assumed

*****_Fiscal Note: The toll is not capped and the lanes are assumed to remain open to toll-paying SOVs and 2-person HOVs, with tolls increasing in order to match demands for the lanes with the space available._

Maximum Toll Rate

National Experience Varies

	Primary Goal	Length	Maximum Toll
SR 167 King County, WA	Traffic	9 miles	$9.00 $1.00 per mile
SR 91 Orange County, CA	Revenue	10 miles	No maximum. Fixed schedule adjusted based on 90-day performance, current highest rate is $9.85 Currently, $0.99 per mile
I-495 Capital Beltway Virginia	Revenue	14 miles	No maximum
I-95 Miami, FL	Revenue	7 miles	$10.50 $1.50 per mile (Trigger establishes conditions for raising per-mile rate)
I-85 Atlanta, GA	Traffic	15 miles	$13.50 for full length $0.90 per mile
I-394 Minneapolis, MN	Traffic	11 miles	$8.00 $0.73 per mile
I-10/I-110 Los Angeles CA	Traffic	I-10:14 miles I-110:11 miles	I-10: $19.60 for full length I-110: $15.40 for full length $1.40 per mile for each
I-10 Katy Managed Lanes Houston, TX	Traffic	12 miles	$7.00 (Fixed time of day schedule/does not vary dynamically) $0.58 per mile

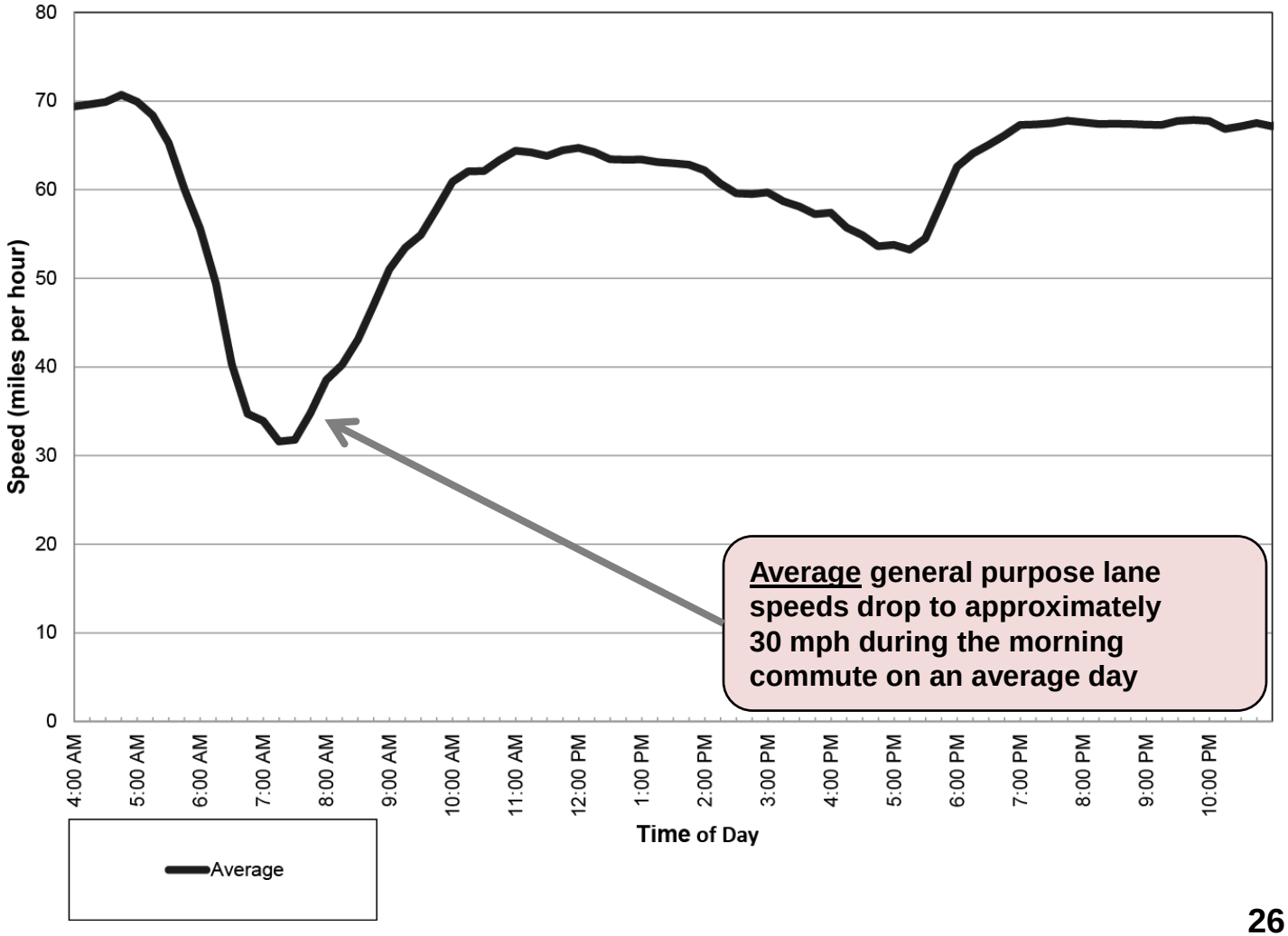
Maximum Toll Rate

Variability is Responsible for Highest Rates

- General purpose lane congestion increases demand for use of the express toll lanes
- For initial operation, a typical day would have rates between $0.75 and $4.00
- Toll rates not expected to reach highest levels except for extremely congested days

I-405 Southbound
Bothell area

2013
General Purpose
Average Speed
Monday - Friday



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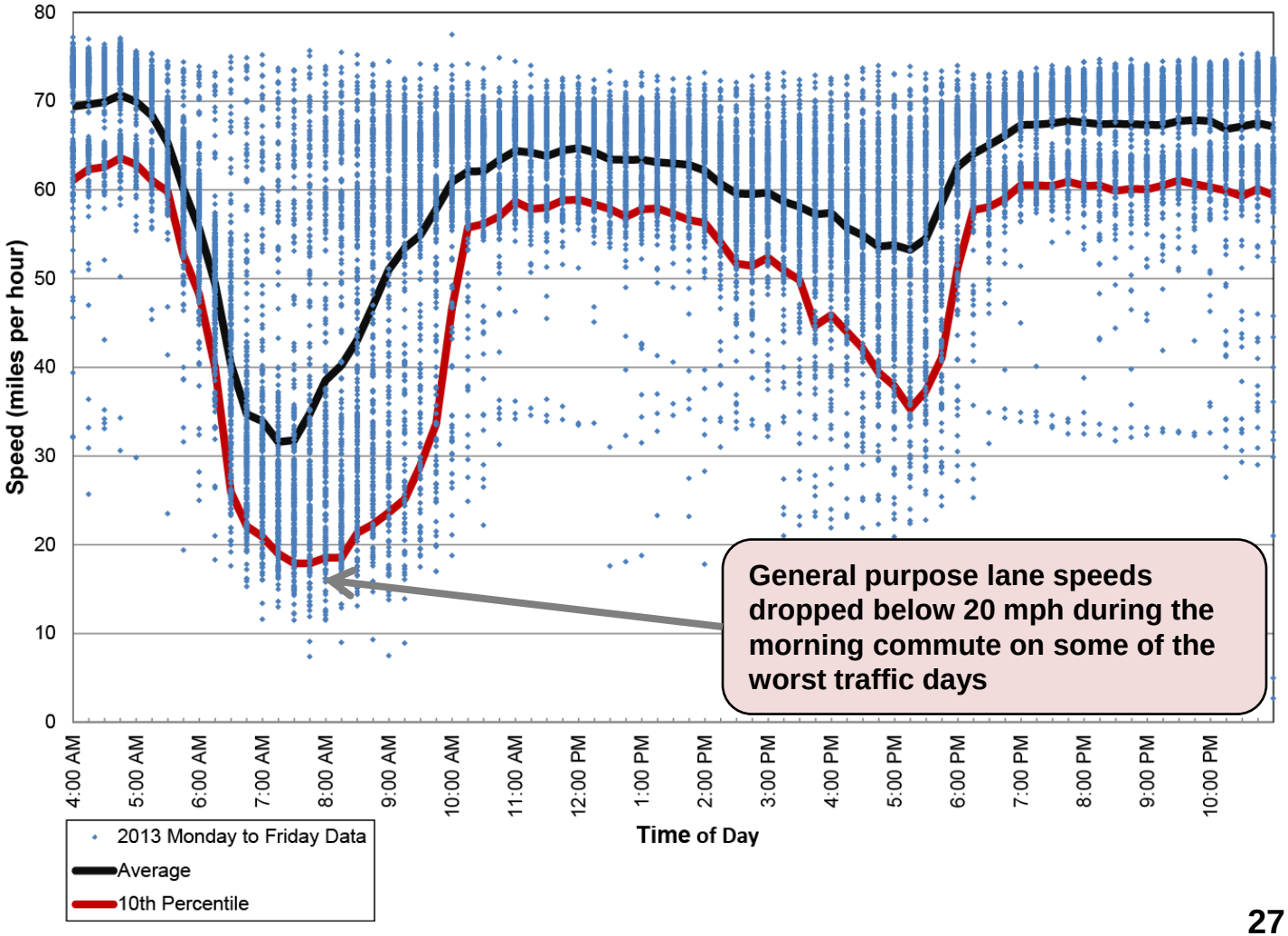

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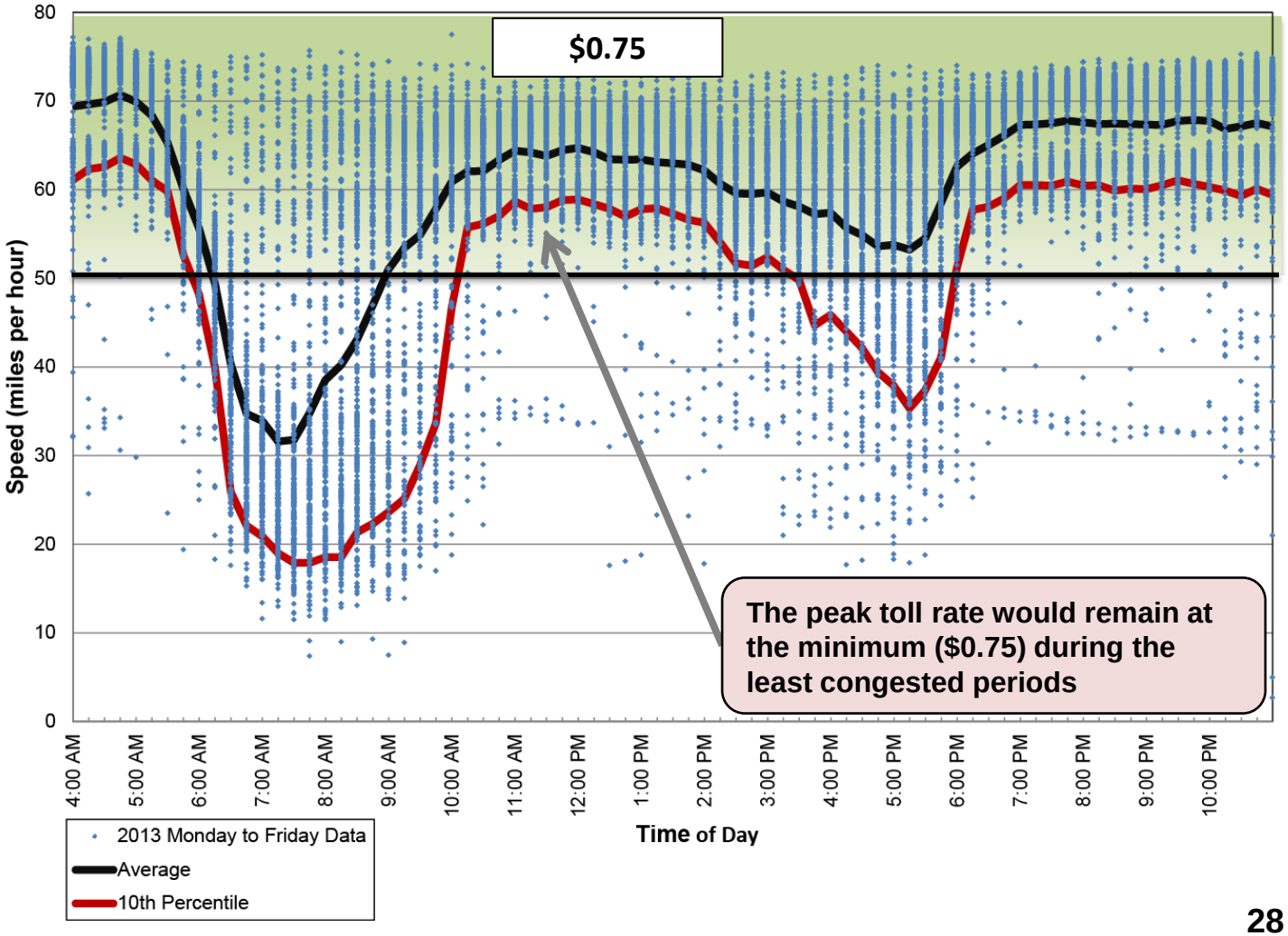

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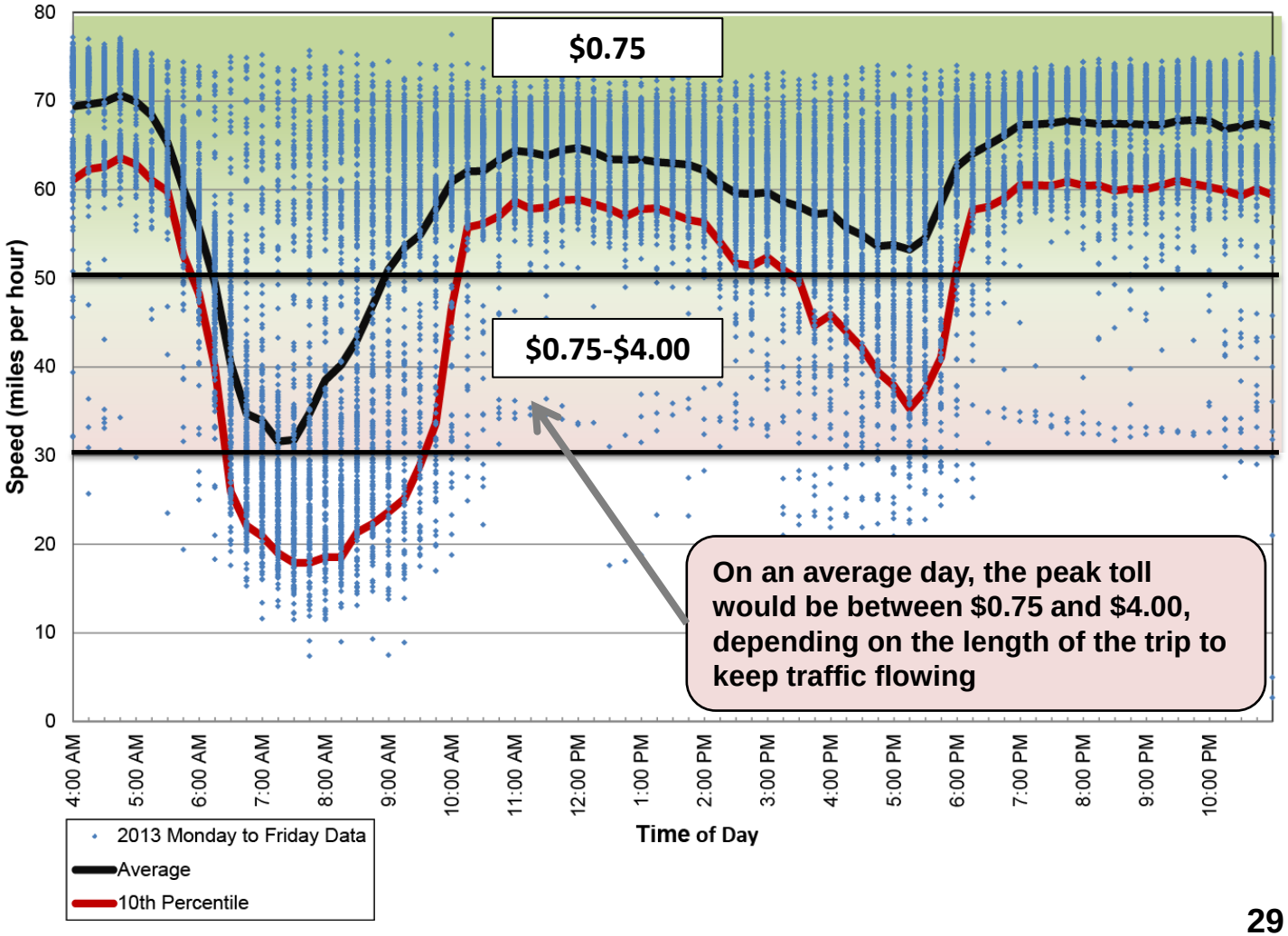

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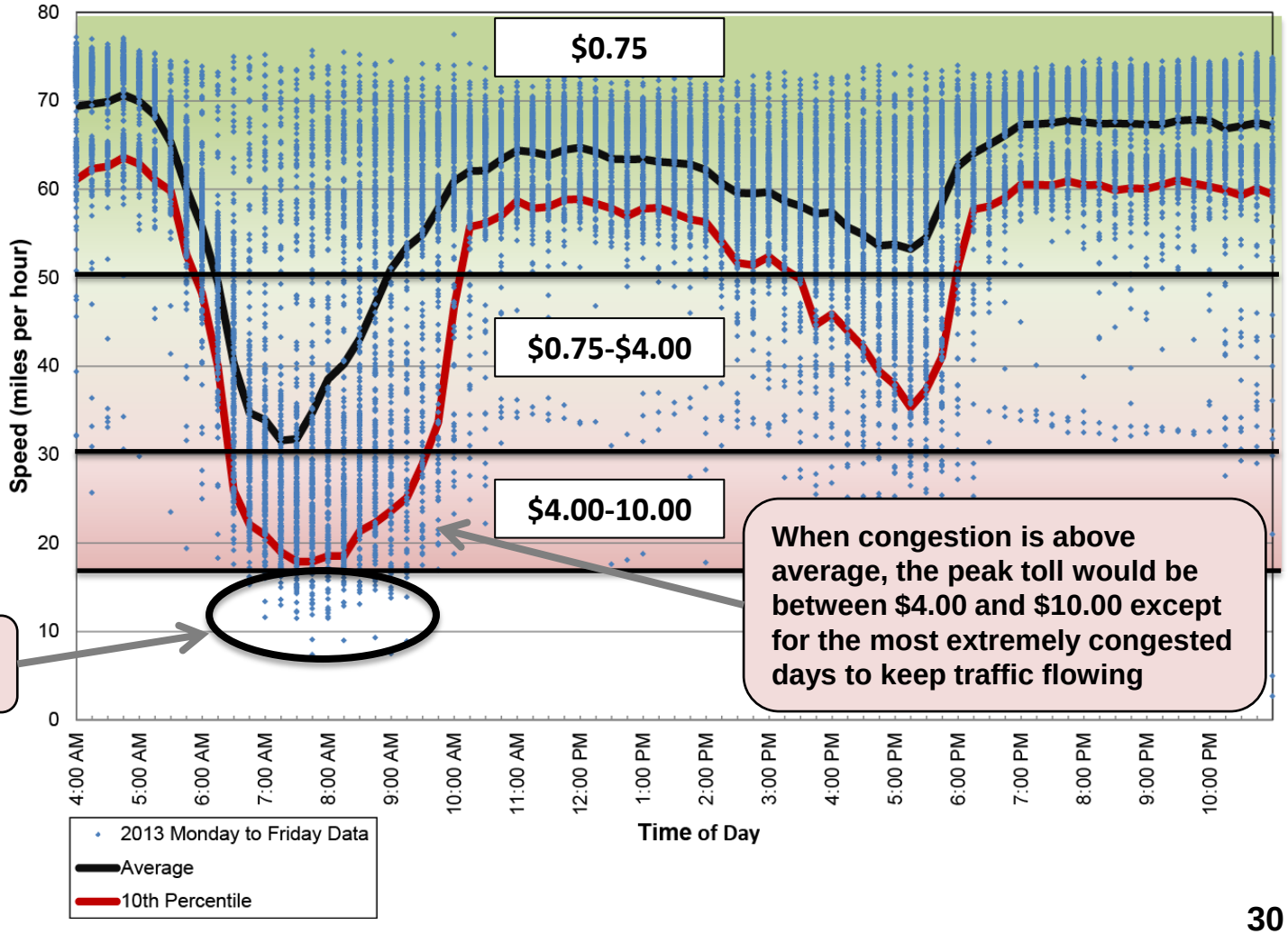


On some days, performance may degrade

When congestion is above average, the peak toll would be between $4.00 and $10.00 except for the most extremely congested days to keep traffic flowing

Tolling Subcommittee Recommendation

$10.00 maximum *Good To Go!* toll rate

- Allows for congestion management on all but extremely congested days
- When the maximum toll rate is reached, the system will remain at the maximum rate instead of switching to HOV-only to allow customers access to the lanes when they are needed most

Pay By Mail Differential

- **The Commission may set a toll differential for Pay By Mail transactions**
  - Higher cost due to mailing and address look-ups
  - Not all post-paid tolls will be collected
  - Modeling assumed a $1.70 Pay By Mail toll differential in FY 2017
  - Increment would be added to dynamic *Good To Go!* toll rate
  - Signs would tell customers an additional charge applies
  - Intent to cover incremental costs and losses of payment method

Components of Pay By Mail Costs and Losses

- **Additional costs compared to *Good To Go!***
  - Printing and postage associated with toll bills
  - Out-of-state license plate lookup
  - Additional time on phone with Customer Service Center
- **Uncollected tolls raise the transaction cost for paying customers**
  - Unbillable transactions: Some transactions can't be billed due to unreadable license plates or unavailable addresses
  - Unpaid transactions: Some tolls won't be paid within 80 days and may be captured instead as part of civil penalty revenue
- **Additional tolls may be received during the civil penalty process but are not included in net revenues**

Tolling Subcommittee Recommendation

$2.00 Pay By Mail increment

- Intended to cover incremental costs and losses of payment method
- Provides strong incentive to use *Good To Go!* pass
- Consistent with SR 16 Tacoma Narrows Bridge Pay By increment
- Long-range objective to have Pay By Mail increment consistent across all facilities

Exemptions

- I-405 toll authorization legislation requires transit and vanpools to be exempt
- Federal law requires motorcycles and carpools to be exempt when converting HOV lanes to express toll lanes
- Existing WSDOT WAC defines 16+ passenger buses as HOVs
- The Transportation Commission can authorize other exemptions

Exemptions by Facility

	Carpools	Transit/ Vanpools	Private Buses	Motorcycles	Emergency Vehicles	Incident Response/ Tow Trucks	Maintenance Vehicles
Tacoma Narrows Bridge					In-Service		In-Service
SR 520 Bridge	3+, once complete	At all times	At all times		In-Service	In-Service	In-Service
SR 167 HOT Lanes	2+	At all times	At all times	At all times	On-Duty	In-Service	At all times
I-405 Express Toll Lanes (opening late 2015)	2+/3+	At all times	At all times	At all times	To Be Determined	To Be Determined	To Be Determined
SR 99 Tunnel	To Be Determined	To Be Determined	To Be Determined	To Be Determined	To Be Determined	To Be Determined	To Be Determined

On-Duty = vehicle operating in an official capacity

In-Service = on-duty and responding to an incident. Includes private tow trucks directed by WSP to clear vehicles from SR 520 bridge

Exemptions – Private transportation services

- WSDOT has defined HOV lanes in WAC to allow private buses with 16 or more seats, in-service emergency vehicles and in-service tow trucks to use HOV lanes without the required number of occupants
- RCW allows WSDOT to authorize the following private transportation vehicles to use HOV lanes without passengers if they have capacity for 8 or more passengers and HOV speed and reliability will not be compromised. The Commission is not required to exempt these vehicles, but may wish to:
  - Paratransit vehicles for people with special transportation needs
  - Airport taxis or shuttles
  - Charter buses
  - Private employee transportation providers

	Pros	Cons
Private Transportation Services Exemption	• Reliable private transit services • Reduces costs for paratransit • Consistency with the rest of the HOV system	• May open door to other exemptions • Slight revenue impact

Tolling Subcommittee Recommendation

Exemption for the following vehicles:

- Transit buses and vanpools as defined in RCW 46.56.880
- High occupancy vehicles: Carpools, motorcycles and private buses with 16 or more seats as defined in WAC 468.510.010
- Washington state patrol vehicles directly providing service to the express toll lane facility
- Authorized emergency vehicles on bona fide emergencies
- Department maintenance vehicles directly involved in roadway maintenance on the I-405 express toll lanes, including the department's incident response vehicles responding to incidents
- Tow trucks authorized by Washington state patrol responding to clear blocking vehicles from the toll facility

Carpool Occupancy

- **Executive Advisory Group Recommendations**
  - Exempt 3+ carpools at peak times, 2+ carpools at off-peak times
  - Some EAG members stressed this should be an interim measure, assuming an eventual 3+ definition at some point in the future
- **Policy Choices Evaluated**
  - 3+, 3+ peak / 2+ off-peak, 2+ toll exemptions
  - 2+ fixed-rate discount
  - No carpool exemption (everybody pays)
- **Considerations**
  - Must meet performance and revenue requirements of RCW 47.56.880
  - Carpools will need an account and Flex Pass to get an exemption
  - Complexity of messaging/education and public acceptance
  - Ability to transition to 3+ in future when/if needed

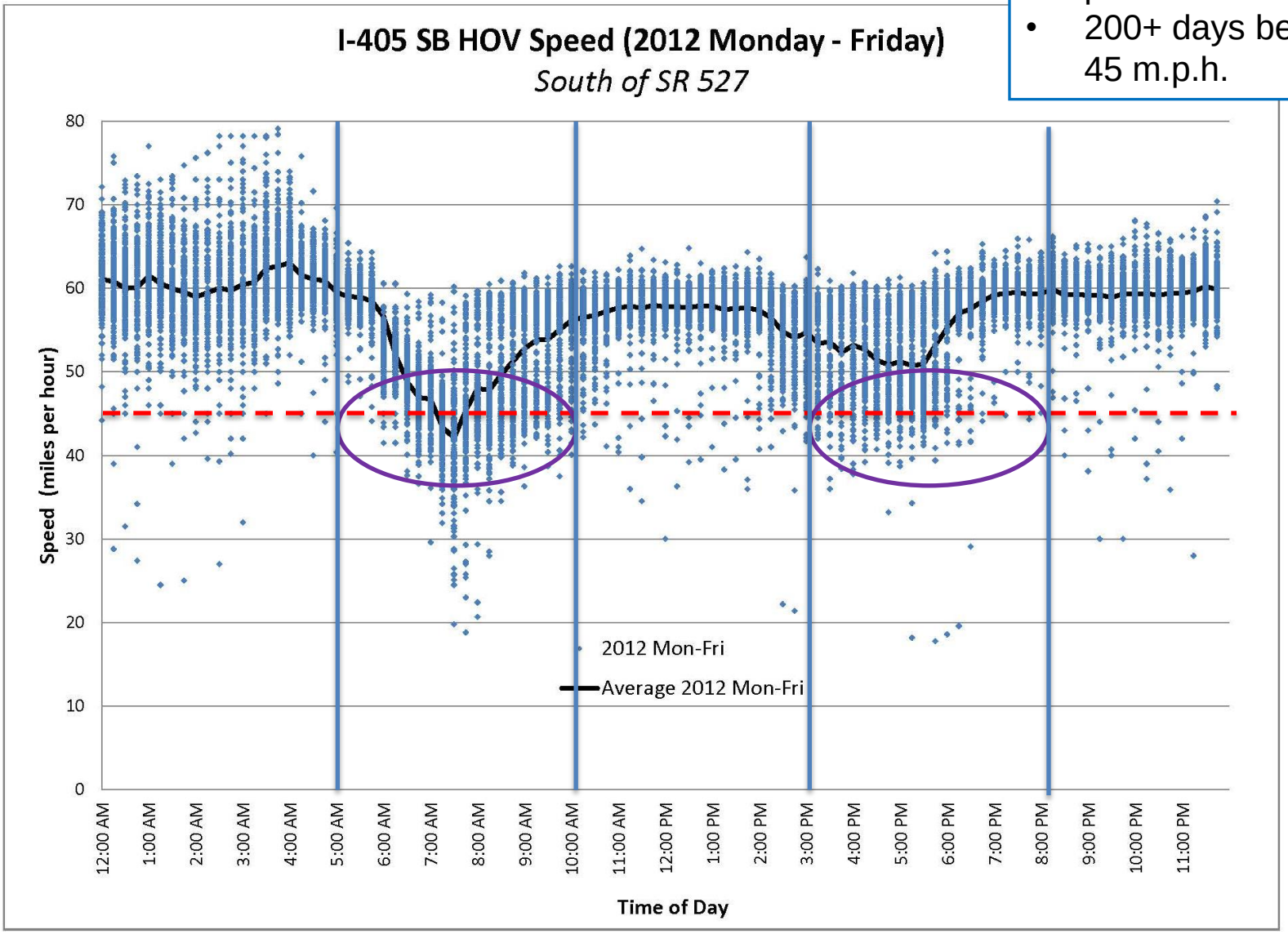
EAG Comparison of Carpool Occupancy Scenarios

Good/ Easy · Ok/ Somewhat easy/hard · Poor/ Hard	A. Carpool Free	B. Carpool Discount	C. Peak Free / Off-Peak Free	D. Carpool Free
		$1.00 · $.50		
System reliability/ Operations	○	● ●	●	●
Toll Rates/Pricing	○	● ●	●	●
Initial Net Revenue	○	○ ●	●	●
Public acceptance	●	◐ ○	◐	◐
Usability	●	◐ ◐	◐	●
Enforcement	◐	◐ ◐	◐	◐
Regional operations/Future decision	○	● ●	◐	●

System reliability today – I-405

Current *performance issues during peak periods*

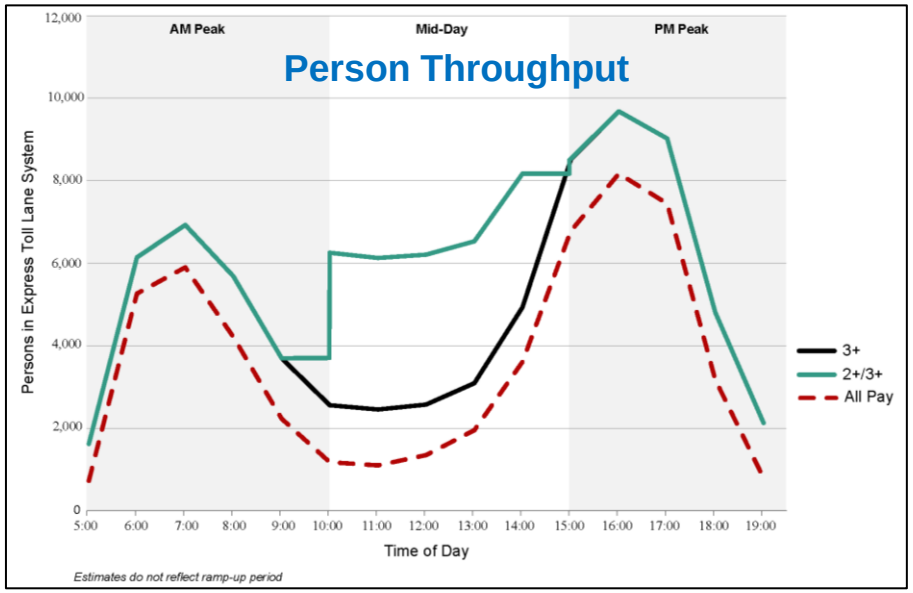
- Carpool lane speed degradation in both peak periods
- 200+ days below 45 m.p.h.

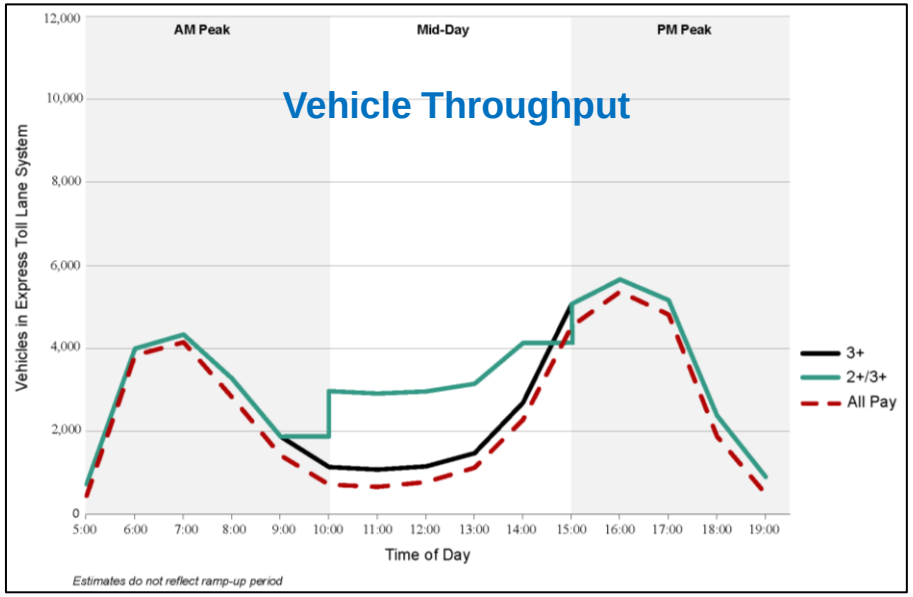


Carpool Scenario Results

Opening year throughput in Express Toll Lanes

- During peak periods, all scenarios offer similar express toll lane throughput
- The All Pay scenario has slightly lower throughput than the other options as there are no free trips
- During off-peak periods, 2+/3+ shows more vehicles in the express toll lanes, however all lanes are free flow





Early Year Net Revenue Projections

Millions of Dollars — Assumes Renton to Bellevue Opens 1/1/2022

Fiscal Year	Scenario A — 2+ Carpool Free | Photo Tolling*					
	Toll Trips	Toll-Free Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	2.4 M	7.8 M	$2.8 M	$2.6 M	($5.0 M)	($2.4 M)
2017	3.9	12.2	4.7	4.3	(6.4)	(2.1)
2018	4.5	13.7	5.6	5.2	(7.1)	(2.0)
2019	4.7	14.0	6.1	5.6	(7.3)	(1.7)
2020	4.9	14.1	6.6	6.1	(7.6)	(1.5)
2021	5.2	14.3	7.2	6.6	(8.0)	(1.4)
2022	10.4	28.3	22.0	20.2	(19.4)	0.9
2023	18.3	50.9	44.1	40.5	(27.5)	13.0

Fiscal Year	Scenario B — $1.00 Carpool Discount*					
	Full Toll Trips	Discount Toll Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	3.1 M	10.2 M	$3.9 M	$3.3 M	($6.2 M)	($2.8 M)
2017	3.9	12.7	5.3	4.5	(6.9)	(2.4)
2018	4.3	14.1	6.3	5.3	(7.4)	(2.1)
2019	4.5	15.4	7.0	6.0	(7.8)	(1.8)
2020	4.6	16.8	7.9	6.7	(8.3)	(1.6)
2021	4.8	18.4	8.9	7.5	(9.0)	(1.5)
2022	10.5	28.5	35.7	30.4	(19.1)	11.3
2023	19.1	45.7	77.7	66.0	(25.9)	40.1

Fiscal Year	Scenario B-2 — $0.50 Carpool Discount | Photo Tolling*					
	Full Toll Trips	Discount Toll Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	4.1 M	4.7 M	$6.9 M	$6.4 M	($5.9 M)	$0.4 M
2017	5.2	6.0	9.3	8.5	(6.7)	1.8
2018	6.0	6.9	11.2	10.3	(7.6)	2.7
2019	7.0	8.4	13.5	12.5	(8.5)	4.0
2020	8.0	10.1	16.3	15.0	(9.6)	5.4
2021	9.3	12.2	19.6	18.0	(11.1)	7.0
2022	16.0	18.4	46.5	42.7	(22.5)	20.2
2023	26.4	29.1	88.4	81.3	(30.5)	50.8

Fiscal Year	Scenario C — 2+ Carpool Free Off-Peak | 3+ Carpool Free Peak | Photo Tolling*					
	Toll Trips	Toll-Free Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	4.4 M	3.5 M	$4.9 M	$4.5 M	($5.0 M)	($0.5 M)
2017	7.1	5.5	8.2	7.6	(6.4)	1.2
2018	8.0	6.1	9.9	9.1	(7.1)	2.1
2019	8.3	6.2	10.8	10.0	(7.2)	2.8
2020	8.5	6.3	11.8	10.8	(7.4)	3.4
2021	8.7	6.3	12.8	11.7	(7.8)	3.9
2022	18.2	14.5	40.8	37.5	(19.8)	17.7
2023	32.8	27.7	83.7	76.9	(28.7)	48.2

Fiscal Year	Scenario D — 3+ Carpool Free | Photo Tolling*					
	Toll Trips	Toll-Free Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	5.0 M	1.3 M	$5.3 M	$4.9 M	($4.6 M)	$0.3 M
2017	7.9	2.1	9.0	8.3	(5.8)	2.5
2018	9.0	2.3	10.8	9.9	(6.4)	3.5
2019	9.2	2.3	11.7	10.8	(6.5)	4.3
2020	9.5	2.4	12.6	11.6	(6.7)	4.9
2021	9.7	2.4	13.6	12.5	(7.1)	5.5
2022	21.2	7.3	44.2	40.5	(19.3)	21.2
2023	39.1	15.3	91.1	83.7	(28.3)	55.4

Fiscal Year	Scenario E — 3+ Carpool Free*					
	Toll Trips	Toll-Free Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	4.9 M	1.3 M	$4.8 M	$4.1 M	($3.8 M)	$0.3 M
2017	7.8	2.1	8.1	6.9	(4.5)	2.3
2018	8.8	2.3	9.7	8.3	(4.9)	3.3
2019	9.0	2.3	10.6	9.0	(5.0)	4.0
2020	9.1	2.3	11.4	9.7	(5.1)	4.6
2021	9.2	2.4	12.4	10.5	(5.4)	5.1
2022	21.0	7.0	40.1	34.1	(14.9)	19.2
2023	39.1	14.2	82.6	70.2	(21.0)	49.2

NOTES:

* CDM Smith traffic and revenue projections.

† Cambridge Systematics "50th Percentile" traffic and revenue projections.

[1] Year of collection dollars.

[2] Adjusted for potential uncollectible revenue. Excludes rebilling fees.

[3] Includes facility O&M costs starting in FY 2022, plus toll collection costs and credit card fees in all years.

11/13/2013

Meets revenue requirement in EHB 1382

Does not meet EHB 1382 revenue requirement

Washington State Department of Transportation

Tolling Subcommittee Recommendation

Three or more person vehicles exempt during peak periods, two or more persons exempt at all other times

- Executive Advisory Committee recommended the 2+ off-peak free / 3+ peak free carpool definition
- 3+ is needed in peak periods
- 2+ during peak periods does not meet federal performance requirements or provide sufficient revenue to cover operating costs
- 2+ during midday minimizes the impact to existing carpools while making better use of the express toll lanes capacity
- 2+/3+ carpool definition provides a transition period until such time that 3+ is needed even during off-peak periods to ensure express toll lane performance

Definition of Peak Periods

Assumptions

- **Carpools meeting eligibility requirements will be toll-free**
  - Must have a Flex Pass and a *Good To Go!* account in good standing
  - Must meet occupancy requirements during the time period they travel
- **Carpool definition will vary by time of day, but be consistent on a daily basis**
  - 3+ eligible at all times
  - 2+ eligible during off-peak periods and weekends
- **Express toll lanes will operate 24 hours a day**

Definition of Peak Periods

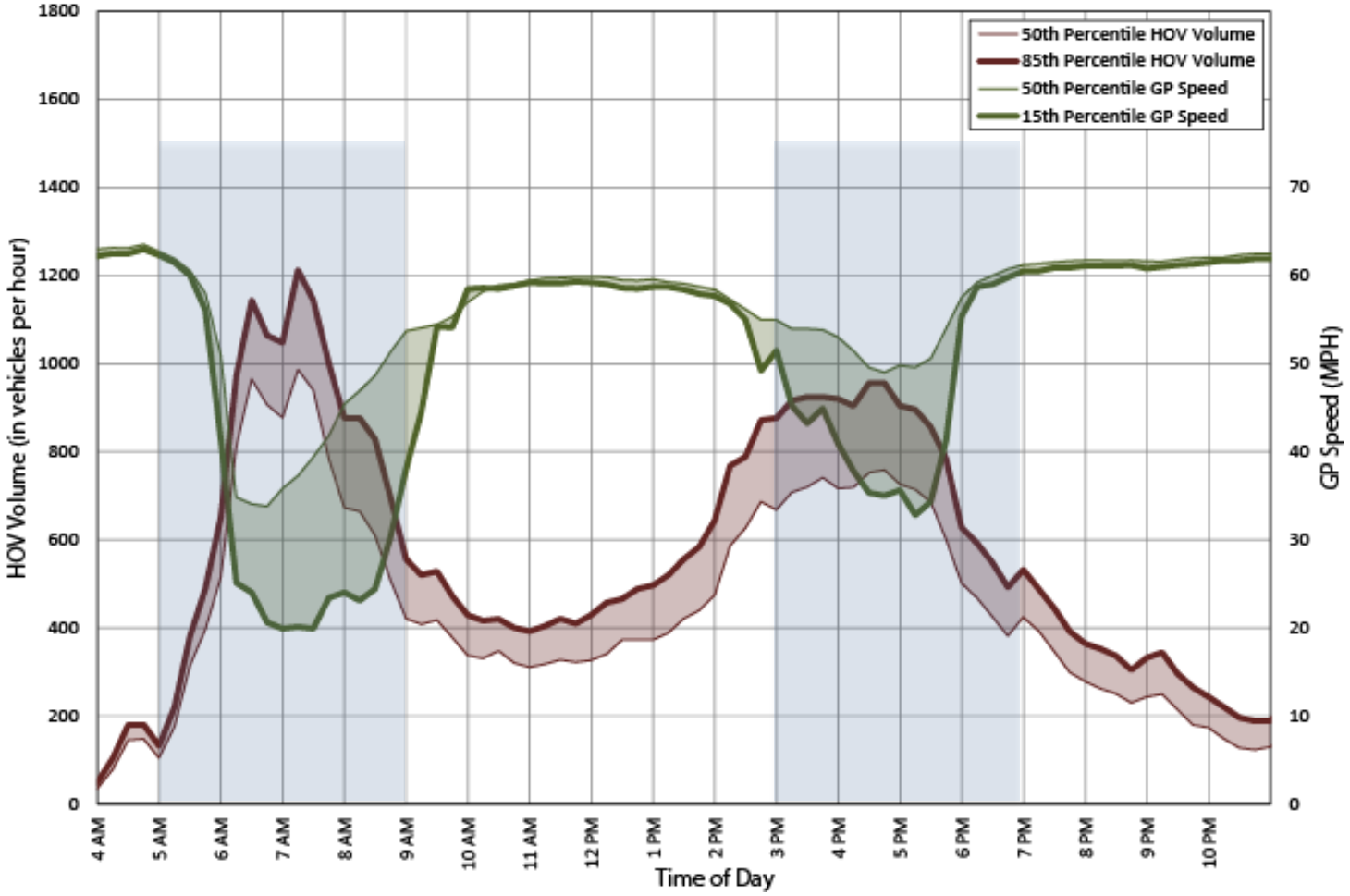
WSDOT traffic engineers recommend considering the following factors to define when 3+ carpool definition should apply:

- Timing for changes in the occupancy requirement should avoid abrupt changes in traffic performance and toll rate changes
- Peak period hours should:
  - Apply corridor-wide and in both directions
  - Consider peak period hours of transit use
  - Optimize total highway performance
- Facility Performance Impacts
  - HOV volumes frequently exceed 800 vehicles per hour
  - General purpose lane speeds frequently drop below 55 mph
  - Impact on meeting revenue objectives
- Consistency with I-405 HOV operating hours (currently 5 a.m. to 7 p.m.)

Definition of Peak Periods

2013 Southbound 2+ HOV Volumes/GP Speeds

Weekday, Zone A, Bothell area (north of SR 527)

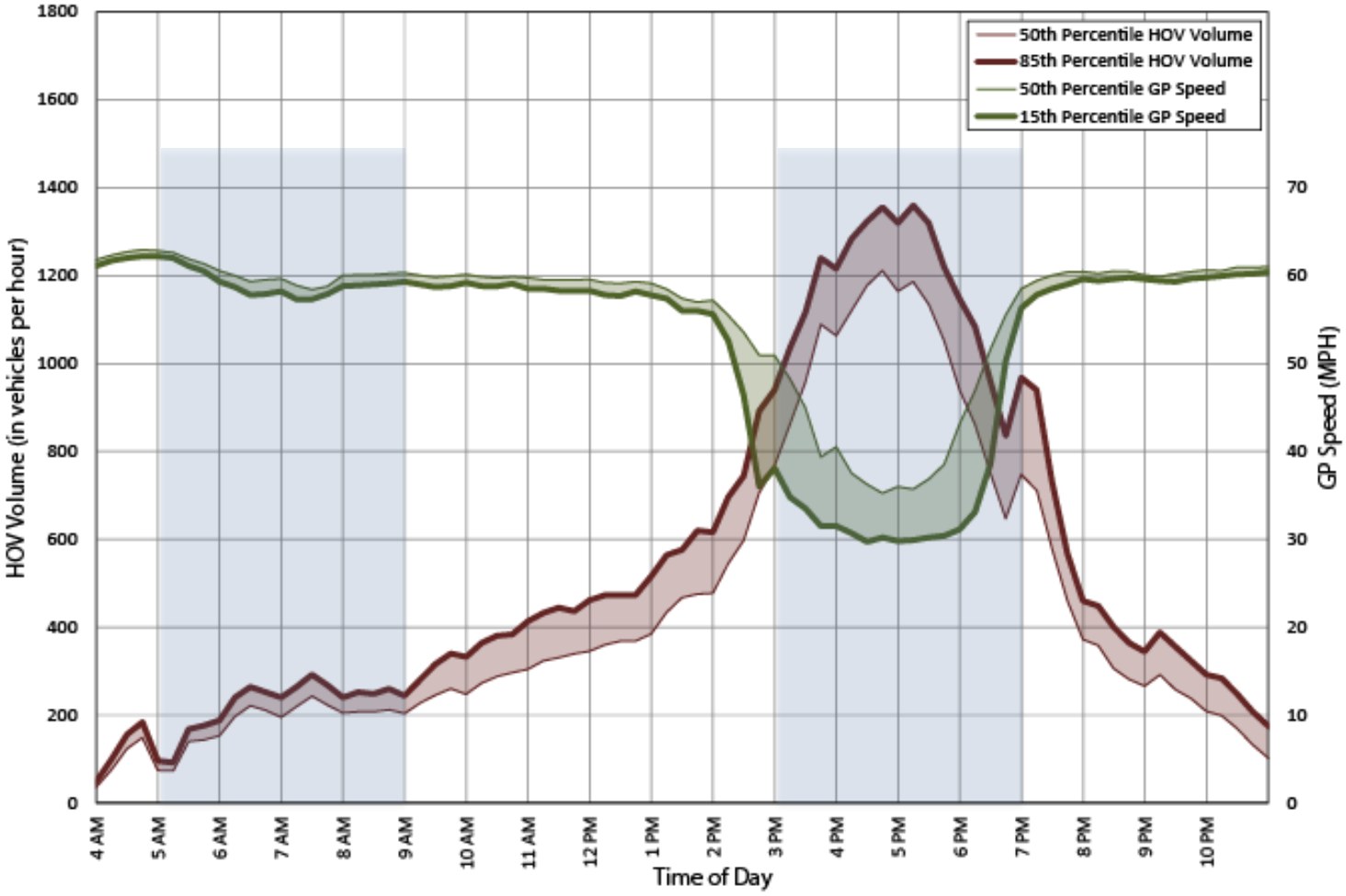


- Red lines are HOV volumes
- Green lines are general purpose lanes speeds
- Starting at the north heading southbound, congestion and high HOV volumes occur both AM and PM in the single-lane section

Definition of Peak Periods

2013 Northbound 2+ HOV Volumes/GP Speeds

Weekday, Zone A, Bothell area (north of SR 527)



- Red lines are HOV volumes
- Green lines are general purpose lanes speeds
- Starting at the south heading northbound, HOV volumes and general purpose lanes congestion are both high in the PM leaving Bellevue and SR 520
- HOV volumes decrease but congestion broadens through Kirkland
- Moving past SR 522 into the single-lane section, HOV volumes decrease
- No significant AM congestion is shown

Key Considerations

- **If peak periods are defined too tightly,** high volumes of toll-free vehicles may reduce express toll lane reliability and revenue
- **If peak periods are defined too broadly,** general purpose congestion could persist or worsen initially, while the express toll lanes appear underutilized
- **During the initial ramp-up period**, congestion and underuse may be a greater risk depending on how long it takes potential customers to become familiar with the facility
- **Different traffic dynamics are in effect at the beginning and end of peak periods:**
  - At the start of the peak period, rapid increases in lane volumes can cause traffic to break down and become congested earlier or more severely as throughput approaches capacity
  - At the end of the peak period, opening express toll lanes to more vehicles may help dissipate congestion and shorten its duration

Definition of Peak Periods

Tolling Subcommittee Recommendation

Peak periods: 5 a.m. to 9 a.m. and 3 p.m. to 7 p.m.

- Recommendation made in conjunction with WSDOT traffic engineers using data analysis of the corridor
- Consistent with traffic trends
- Consistent with HOV operating hours (currently 5 a.m. to 7 p.m.)

Summary of Proposed Policy Decisions

- **Minimum Toll Rate:** **$ 0.75**
- **Maximum Toll Rate:** **$ 10.00**
- **Pay By Mail Toll Increment:** **$ 2.00**
- **Exemptions:**
  - Transit
  - Vanpools
  - HOV's including carpools, motorcycles and 16-passenger buses
  - In-service emergency vehicles, maintenance, enforcement, and incident management vehicles, including private tow-trucks when directed by WSP
- **Carpool Policy**
  - 3+ HOV exempt at all times
  - 2+ HOV exempt except 5-9 a.m. and 3-7 p.m. on weekdays

For questions or further information…

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